ANACONDA ARCHITECTURAL EXTRUDED SHAPES

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ROLLED AND DRAWN SHAPES
CASTING METALS

•

Specification Data

ANACONDA
from mine to consumer

THE AMERICAN BRASS COMPANY
GENERAL OFFICES: WATERBURY, CONNECTICUT

Anaconda Publication B-7-e

We acknowledge the assistance of The American Institute of Architects in criticizing the subject matter and form of presentation of this publication.

NOTICE

The statements and data contained in this publication are based on extensive investigation and practical experience, and represent the best information available at time of printing, April 1939. This information is subject to change at any time principally because of new developments and changes in practice.

Our Engineering Department will gladly cooperate in the solution of individual problems involving the use of Anaconda Building Products.

ANACONDA ARCHITECTURAL METALS

FOR the convenience of architects and fabricators, we are presenting herein information on the compositions, available forms, approximate color matches, and various physical properties of Anaconda Extrudable Alloys, as well as other wrought shapes and casting metals often used in combination with them.

ARCHITECTURAL EXTRUDED METALS

As the largest manufacturer of Architectural Extruded Metals, The American Brass Company is in a position to offer many thousands of Anaconda Extruded Shapes for which dies have been released by leading fabricators for general use. The vast majority of these shapes were made to interpret designs of well-known architects. A few typical shapes are illustrated in the borders of the following pages, in cross-section of approximately one-half size.

Anaconda Architectural Bronze Store Front, Dennison's, 411 Fifth Ave., New York City. Frank H. Holden, Architect, J. Stott Dawson, Associate.

CORNICES • ENTABLATURES • OPENING FRAMES

GENERAL INFORMATION

Anaconda Architectural Extruded Shapes, in combination with sheets, rods, tubes and castings, may be used economically in the construction of all types of architectural metal work. The color of extruded bronze is closely matched by Muntz Metal sheets and Red Brass tubes. In addition, pleasing color harmonies may be achieved by combining extruded bronze shapes with Nickel Silver, Copper, etc.

EXTRUDED METAL

Extrusion consists of forcing metal heated to a semi-plastic state through dies by hydraulic pressure, thus producing shapes with the following advantages:

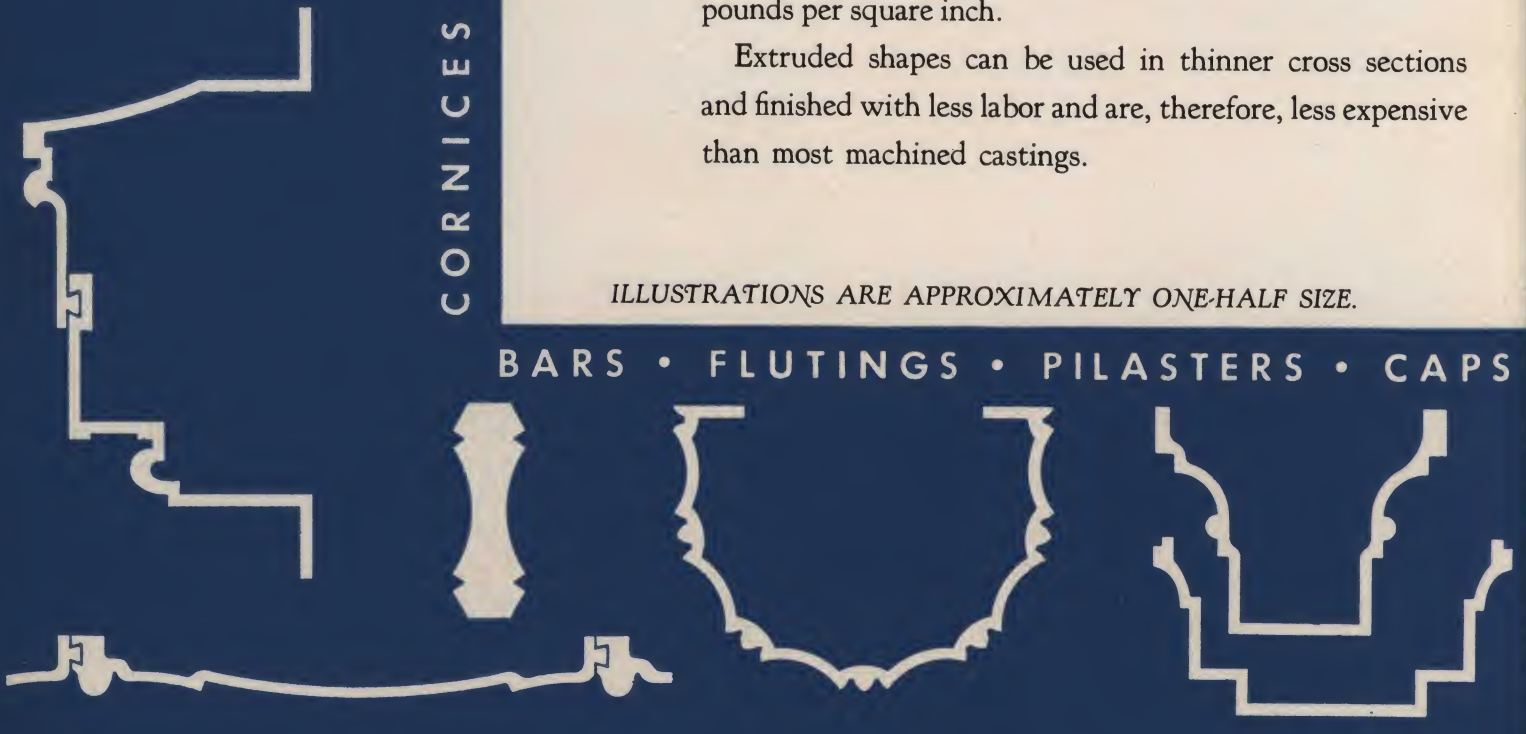
The bars are uniform in cross section with sharp corners and clean cut lines, accurately reproducing the architect's designs.

The surfaces are smooth and sufficiently true to dimension to require little, if any, machining.

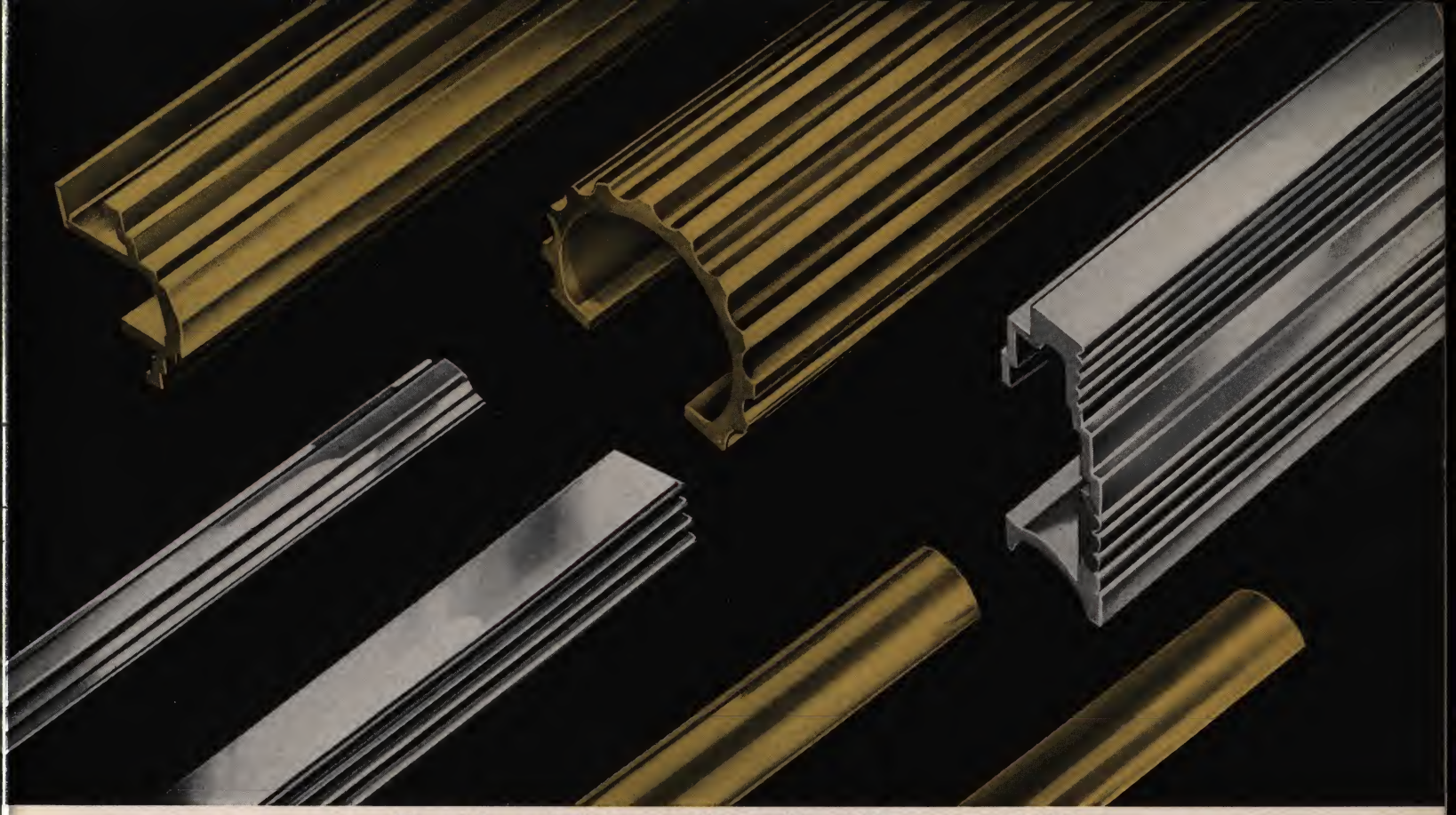
As extruded shapes are wrought under pressure, they are free from blow holes and other defects common in sand castings, and have a tensile strength in excess of 50,000 pounds per square inch.

Extruded shapes can be used in thinner cross sections and finished with less labor and are, therefore, less expensive than most machined castings.

ILLUSTRATIONS ARE APPROXIMATELY ONE-HALF SIZE.



BARS • FLUTINGS • PILASTERS • CAPS



Typical Anaconda Architectural Shapes of Extruded Bronze and Nickel Silver

COLOR EFFECTS

The natural golden color of Anaconda Extruded Bronze Shapes changes, after exposure, to the characteristic shades of weathered bronze. The metal can be artificially colored by the fabricator to obtain any effect desired, such as Statuary Bronze, Verdi Antique, Flemish Brass or other oxidized finishes. Many shapes, particularly those of simpler design, are also available in Nickel Silver alloys containing a maximum of approximately 13% nickel. Before designing assemblies which embody extruded shapes of Nickel Silver, architects should consult a representative of The American Brass Company to make certain that the required shapes can be produced in the desired Nickel Silver alloy.

ILLUSTRATIONS ARE APPROXIMATELY ONE-HALF SIZE.

POSTS • TRANSOM SASH • DOORS • SADDLES

MAINTENANCE

Bronze and Nickel Silver are easily cleaned. Their original appearance can be retained with only occasional attention. Even when these metals have been long neglected, cleaning and polishing restore their natural color and luster.

EXPANSION

On interior installations, it is seldom necessary to take into consideration expansion and contraction of architectural shapes. However, on exterior work where long runs are subjected to wide temperature ranges, provision should be made for expansion and contraction. The coefficient of expansion is given in the specification data on the following pages.

QUANTITY

Anaconda Extruded Shapes are produced from billets weighing 100 pounds or more, and, as the process is limited accordingly, it is not practical to execute orders for smaller quantities or longer lengths than can be obtained from a single billet.

ESTIMATES

The American Brass Company offers full cooperation in furnishing estimates covering the cost of Extruded Shapes and in determining the suitability of these shapes for various uses. While quotations can usually be prepared from detailed blueprints and specifications, representatives are available for personal consultation. Address The American Brass Company, General Offices, Waterbury, Connecticut, or the Branch Office nearest you as indicated by the address page in the back of this booklet.

FACILITIES

The American Brass Company maintains complete facilities for serving the East from Ansonia, Conn., the West from Kenosha, Wis., and Canada from New Toronto, Ontario (Anaconda American Brass Limited).

ILLUSTRATIONS ARE APPROXIMATELY ONE-HALF SIZE.

DOOR FRAMES • MULLIONS • TRANSOM BARS

SPECIFICATION DATA

The following pages include information on compositions, color matches, forms, and physical properties of Anaconda Extrudable Alloys, and other wrought shapes or casting metals used in combination with them.

ARCHITECTURAL EXTRUDED BRONZE

COMPOSITION . . . . Copper 55.00-58.00%

Lead	2.00-3.25%	Manganese . .	0.25% Maximum
Iron	0.50% Maximum	Other Elements	0.75% Maximum
Tin	0.50% Maximum	Zinc	Remainder

COLOR . . . . . Architectural Extruded Bronze approximately matches the color of Architectural Bronze Casting Ingot, Red Brass 85% and Muntz Metal.

FORMS AVAILABLE . Rods and bars; extruded shapes (6" over-all maximum width). Screws and rivets of suitable composition to obtain approximate color match are procurable from outside sources.

COEFFICIENT OF EXPANSION . . . . . Average coefficient of linear expansion per °C. from 25° to 100°C. 0.000020 (approximate). (For a 100°F. temperature rise, this would be approximately ⅛ inch for each ten feet of length.)

WELDING METHOD . Oxy-acetylene. MELTING POINT . . . 884°C. (1623°F.).

MUNTZ METAL

COMPOSITION . . . . Copper . . . . . 58.00 - 61.00% Tin . . . . . 0.25% Maximum

Lead	0.35% Maximum	Other elements	0.10% Maximum
Iron	0.15% Maximum	Zinc	Remainder

COLOR . . . . . Muntz Metal approximately matches the color of Architectural Extruded Bronze, Architectural Bronze Casting Ingot and Red Brass 85%.

FORMS AVAILABLE . Sheet and strip; wire; rods and bars. Screws and rivets of the above alloy or other suitable composition to obtain approximate color match are procurable from outside sources.

COEFFICIENT OF EXPANSION . . . . . Average coefficient of linear expansion per °C. from 25° to 100°C. 0.0000194. (For a 100°F. temperature rise, this would be approximately ⅛ inch for each ten feet of length.)

WELDING METHOD . Oxy-acetylene. MELTING POINT . . . 905°C. (1661°F.).

ILLUSTRATIONS ARE APPROXIMATELY ONE-HALF SIZE.

CASEMENT AND STATIONARY WINDOWS

SPECIFICATION DATA

RED BRASS 85%

COMPOSITION . . . .

Copper	84.00 - 86.00%		
Lead	0.05% Maximum	Other elements	0.10% Maximum
Iron	0.05% Maximum	Zinc	Remainder

COLOR . . . . . Red Brass 85% approximately matches the color of Architectural Extruded Bronze, Architectural Bronze Casting Ingot and Muntz Metal.

FORMS AVAILABLE . Sheet and strip; wire, round and flat; rods and bars; round and special shape seamless tubes; cold-drawn shapes of uniform thickness formed from sheet metal. Screws and rivets of the above alloy or other suitable composition to obtain approximate color match are procurable from outside sources.

COEFFICIENT OF EXPANSION . . . . . Average coefficient of linear expansion per °C. from 25° to 100°C. 0.0000177. (For a 100°F. temperature rise, this would be approximately 1/8 inch for each ten feet of length.)

WELDING METHODS . Oxy-acetylene, carbon arc, resistance (in order of preference).

MELTING POINT . . . 1020°C. (1868°F.).

ARCHITECTURAL BRONZE CASTING INGOTS

COMPOSITION . . . . .

Copper	81.00 - 84.00%		
Lead	1.50 - 2.50%	Iron	0.35% Maximum
Tin	2.00 - 3.00%	Other elements	0.50% Maximum
Nickel	0.25 - 0.75%	Zinc	Remainder

COLOR . . . . . Castings of Architectural Bronze Ingots approximately match the color of Architectural Extruded Bronze, Red Brass 85%, and Muntz Metal.

FORMS AVAILABLE . Ingots for sand castings.

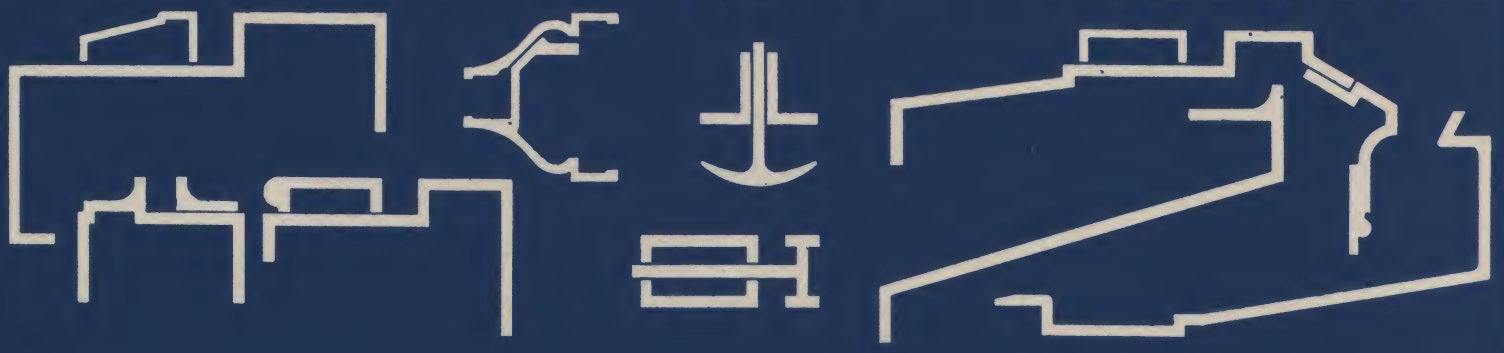
COEFFICIENT OF EXPANSION . . . . . Average coefficient of linear expansion per °C. from 25° to 100°C. 0.000018 (approximate). (For a 100°F. temperature rise, this would be approximately 1/8 inch for each ten feet of length.)

WELDING METHODS . Oxy-acetylene, carbon arc (in order of preference).

MELTING POINT . . . 1015°C. (1859°F.).

ILLUSTRATIONS ARE APPROXIMATELY ONE-HALF SIZE.

GLASS FRAMES • MUNTINS • WINDOW SILLS



SPECIFICATION DATA

EXTRUDED 13% NICKEL SILVER 819

COMPOSITION . . . .

		Copper	40.75 - 43.75%
Nickel	12.00 - 14.00%	Manganese . .	2.50% Maximum
Lead	1.00% Maximum	Other elements	0.75% Maximum
Iron	0.25% Maximum	Zinc	Remainder

COLOR . . . . . Extruded 13% Nickel Silver is approximately the color of 15% Nickel Silver 741 sheet and tube.

FORMS AVAILABLE . Rods and bars (5/16" minimum diameter); extruded shapes (1/8" minimum thickness). Screws and rivets of suitable composition to obtain approximate color match are procurable from outside sources.

COEFFICIENT OF EXPANSION . . . . . Average coefficient of linear expansion per °C. from 25° to 100°C. 0.000019 (approximate). (For a 100°F. temperature rise, this would be approximately 1/8 inch for each ten feet of length.)

WELDING METHOD . Oxy-acetylene.

MELTING POINT . . . 926°C. (1699°F.).

15% NICKEL SILVER 741

COMPOSITION . . . .

		Copper	55.00 - 58.00%
Nickel	13.50 - 16.50%	Manganese . .	0.50% Maximum
Lead	0.10% Maximum	Other elements	0.25% Maximum
Iron	0.35% Maximum	Zinc	Remainder

COLOR . . . . . 15% Nickel Silver 741 is approximately the color of Extruded 13% Nickel Silver 819.

FORMS AVAILABLE . Sheet and strip; wire, round and flat; rods and bars; round and special shape seamless tubes within certain limits; cold-drawn angles and channels of uniform thickness formed from sheet metal. Screws and rivets of above or other suitable composition to obtain approximate color match are procurable from outside sources.

COEFFICIENT OF EXPANSION . . . . . Average coefficient of linear expansion per °C. from 25° to 100°C. 0.000018 (approximate). (For a 100°F. temperature rise, this would be approximately 1/8 inch for each ten feet of length.)

WELDING METHODS . Oxy-acetylene, resistance (in order of preference).

MELTING POINT . . . 1030°C. (1886°F.).

For similar data on EXTRUDED 10% NICKEL SILVER, *see inside back cover.*

ILLUSTRATIONS ARE APPROXIMATELY ONE-HALF SIZE.

COUNTER SCREENS • HAND RAILS • EDGINGS

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ANACONDA PRODUCTS INCLUDE

COPPER • BRASS • BRONZE AND NICKEL SILVER

in every variety of SHEETS, WIRE, RODS *and* TUBES

ILLUSTRATIONS ARE APPROXIMATELY ONE-HALF SIZE.

MOLDINGS • STRUCTURAL SECTIONS

ADDITIONAL SPECIFICATION DATA

EXTRUDED 10% NICKEL SILVER 825

COMPOSITION . . . .

Copper	43.50-46.50%		
Nickel	9.00-11.00	Manganese . . .	2.50 Maximum
Lead	0.50- 1.50	Other elements .	0.75 Maximum
Iron	0.50 Maximum	Zinc	Remainder

COLOR . . . . . Extruded 10% Nickel Silver is approximately the color of 10% Nickel Silver 752.

FORMS AVAILABLE . Rods and bars (5/16" min. diam.); extruded shapes (1/8" minimum thickness). Screws and rivets of above or other suitable composition to obtain approximate color match are procurable from outside sources.

COEFFICIENT OF EXPANSION . . . . . Average coefficient of linear expansion per °C. from 25 to 100°C. 0.000019 (approximate). (For a 100°F. temperature rise, this would be approximately 1/8 inch for each ten feet of length.)

WELDING METHOD . Oxy-acetylene.

MELTING POINT . . . 927°C. (1701°F.).

10% NICKEL SILVER 752

COMPOSITION . . . .

Copper	63.5-68.5%		
Nickel	9.0-11.0	Manganese . . .	0.50 Maximum
Lead	0.10 Maximum	Zinc	Remainder
Iron	0.35 Maximum		

COLOR . . . . . 10% Nickel Silver 752 is approximately the color of Extruded 10% Nickel Silver 825.

FORMS AVAILABLE . Sheet and strip; wire, round and flat; rods and bars; cold-drawn angles and channels of uniform thickness formed from sheet metal. Screws and rivets of above or other suitable composition to obtain approximate color match are procurable from outside sources.

COEFFICIENT OF EXPANSION . . . . . Average coefficient of linear expansion per °C. from 25 to 100°C. 0.000018 (approximate). (For a 100°F. temperature rise, this would be approximately 1/8 inch for each ten feet of length.)

WELDING METHODS . Oxy-acetylene, Resistance.

MELTING POINT . . . 1010°C. (1850°F.).

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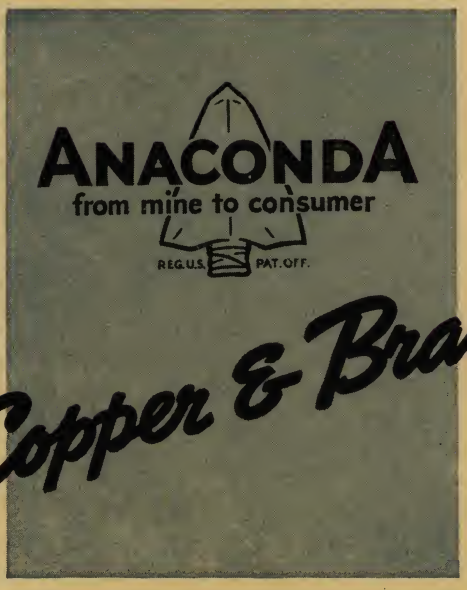
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